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ABSTRACT

This paper is mainly devoted to reviewing past research on music development. Some recommendations for future research on music development and for improving music education for preschool children are also included. The developmental theories of Jean Piaget are discussed in detail, with special attention being given to concepts important to research on music development (i.e., symbolic thinking, conservation, and reversibility of thought). The concepts of musical intelligence and musical memory are discussed along with four stages of artistic development, which correspond to the Piagetian stages of cognitive development, proposed by Dennie Wolf and Howard Gardner (1980). Research is summarized on aural awareness and on discrimination and memory of infants, toddlers, and young children. Studies which are reviewed because they are representative of the field include work by Heinz Werner (1917), the Pillsbury Foundation studies (1937-1948), research based on the concept of conservation, and Jeanne Bamberger's study of children's pictorial representation of rhythm sequences (1982). Finally, it is recommended that future research include both observational and experimental data, that there be more longitudinal studies, and that researchers use tasks that are not verbally oriented. It is also recommended that efforts be increased to make knowledge about young children's music development available to professional child caregivers. (CB)

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State of the Art in Early Childhood Music and Research

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State of the Art in Early Childhood Music and Research

Any attempt to outline a contemporary perspective of early childhood music first requires a retrospective look so that present achievements and practices can be viewed through the lens of past accomplishments and learnings. The last twenty-five years have seen an increased interest in the systematic study of musical development just as the systematic study of child development has been a major contribution to our understanding of human development and personality. The study of child development encompasses a variety of disciplines, viewpoints, theories, and methods. Each viewpoint recognizes the importance of interactions of intellectual, emotional, physical, and social growth. Most of the theories seem to agree that child development is a process that entails sequential levels, phases, shifts, steps or stages through which a child's multifaceted growth passes from infancy to youth. There are some psychologists, however, who do not find the concept of developmental stages particularly useful. van den Daele (1969) presents their position with a clever ditty:

> Milestones, phases and ages
> render general gauges.
> While periods, levels and stages
> require pages and pages. (p. 303)

The lineage of current developmentalists can be traced to the perceptual-cognitive orientation of James Mark Baldwin, Claparede and Piaget; the normative-descriptive orientation of Preyer, Hall and Gesell; and the psychosexual-social-emotional referents of Freud and Erikson. These three groups shared a common affinity for naturalistic observational methods.

Until the early 1950's, child psychologists were clinically oriented and interested in children's perceptions and memories as ends in themselves. Research into the early music responses of young children reflects this interest. Studies were concerned with vocal range; aural discrimination between and among

pitches and between consonance and dissonance; and with the ability of children to respond rhythmically to music.[1] Few attempts were made to tie the findings to developmental theories or to deduce a theory from the findings. The work of the pioneer developmental psychologist Heinz Werner and to a certain extent the Pillsbury Studies are notable exceptions and will be discussed later.

During the mid-1950's and early 1960's, developmental psychologists began to shift their emphasis to perceptual and cognitive development with the accompanying issues of the transformation and structure of systems, developmental stages and transitions, and the mechanisms of developmental change. The music educator-researcher followed this trend. Many studies in our field now consider or search for a developmertal framework; attempt to discern stages or shifts in a child's musical thinking; and probe underlying psychological processes such as memory.

It is also gratifying to the music researcher that the development of musical inteiligence and musical memory has captured the attention and interest of developmentalists and cognitive psychologists. Within the last decade many books, articles and research reports have enhanced our understanding of the very young child's musical development. And as has been seen at this Conference, these ideas and insights have informed our practice and undergirded our teaching materials.

Developmental Theories

Jean Piaget. If any one person can be identified as shaping the course of cognitive developmental psychology, that individual is Jean Piaget. His work was given a new introduction and impetus in this country with the publication of Jerome Bruner's The Process of Education in 1960. This publication, which

1. See, for example, H. M. Williams, C. H. Sievers, and M. S. Hattwick, "The Measurement of Musical Development." University of Iowa Studies in Child Welfare, 1952, 3 (1), 1-191.

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was a report of a conference on educational reform, outlined the main aspects of Piaget's theory of intellectual development. According to Gardner, Piaget's developmental sequence "is the best worked-out trajectory of growth in all of developmental psychology. While many parts of it are susceptible to criticism, it remains the account of development against which all other formulations continue to be judged." (Gardner, 1983, p. 133) Since many music educators and researchers have also been influenced by the Piagetian perspective, we will review key concepts of his theory.

Piagetian theory is a biological theory in that it is based on the adaptation of an individual, complete with his genetic programming, in creative interaction with his environment. The interaction occurs as the individual assimilates what he can easily comprehend even as he accommodates himself to the new and unfamiliar in order to use it. Knowledge at whatever stage of development is created by this interaction. Here we find combined aspects of the maturationist and environmentalist positions in that innate capacity and environmental stimuli are essential to the process, but neither is wholly controlling. The focus is on 1) the child as primary agent in his own learning, 2) development, and 3) depth of understanding. The critical factor is the child's own activity through which he assimilates novel experiences and accommodates himself and his thinking to them. Cognitive behavior is an outward sign of the assimilative and accommodative capacities of the individual. Accommodation with its consequent expansion of an idea or concept is regarded as learning in cognitive terminology.

Piagetian theory is a stage theory of cognitive growth which views human intelligence as moving through successively higher stages from sensori-motor to operational thinking. These stages cut across more than one modality of thought to bring to light important, albeit subtle commonalities. In Piagetian theory the order of stages is both organismic and experiential -- organismic because

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they unfold systematically, and experiential because they are dependent upon environment and experience. The age levels can and do vary according to particularities of physical, social and cultural environments.

During the sensori-motor stage which lasts from birth to eighteen months or two years, the infant learns through his perceptions and actions. From isolated, sporadic actions develop organized movements and patterns that form the basis for his early communication. The appearance of symbolic processes both crowns and terminates the sensori-motor period. Through combinations of existing schemata the child is able to represent to himself the results of his action before the action occurs and to recall the image of an absent person or object. The concept of object permanence is a high point of sensori-motor intelligence and crucial to further development. When an object no longer needs to be present in order to be considered or thought about, the child is freed from the confines of the present. He has acquired both a past and a future.

The preoperational stage, ages two to five, covers the pre-school and kindergarten years. In the sensori-motor stage the child knows objects largely in terms of what he can do with them. During the preoperational stage he begins to capture knowledge through the symbolic realism of language and play. Perceptions and actions become charged with new meanings and integrated into new structural systems as the child relearns some of the lessons already learned at the sensori-motor level. Before conceptual thinking can occur, a symbolic version or transformation of experience has to exist. Symbol formation can perhaps be outlined as follows: experience → representative imitation of experience → image of what is imitated → invention of symbol to convey the image. Here symbolic play and imitation become important avenues for thinking.

Singing games and chants are the embodiment of symbolic play and imitation. They help the child move from sensori-motor experience to a symbolic transformation

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of it. The language of the chant enables the child to encode information. Play enables him to elaborate his understanding of objects by assimilating novel objects into familiar action schemes. In much the same way very young children tend to incorporate words of new chants and songs into existing tune repertoires or add new actions to old songs.

Symbolic play with music as found in children's chants and singing games is also very informative in that it provides an excellent clue as to what very young children find salient in music. These features generally include a predominant rhythm pattern, repeated motifs and lalling and/or nonsense syllables. An example of a song that meets all three criteria is "Toodala".

Another characteristic of the preoperational stage is perceptual dominance of thought. Things are what they seem to be in the immediate perceptual field. This perceptual domination causes the child to focus or "center" on only one aspect of a situation to the exclusion of other aspects. And because preconceptual thought is centered on immediate and individual perception and action, it is egocentric and irreversible. For example, the preoperational child thinks that other individuals view a situation exactly as he does.

The last two stages of Piaget's theory, concrete and formal operations, do not fall within the purview of a conference on early childhood music. Suffice it to say that the concrete operational stage covers the elementary school years; formal operational thought coincides with the beginning of adolescence.

Piagetian theory is a theory of structuralism. In the delineation of stages, Piaget maintains that cognitive structures develop gradually throughout childhood until a coherent system of thinking is formed. The young child's intelligence never stops developing, but certain structures at certain levels and at certain times achieve a relative stability. Each new assimilation and each new accommodation lead to a higher level and more stable point of

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equilibrium. Incomplete systems of thought that conflict with each other are enlarged or integrated through these twin regulatory mechanisms. New knowledge results and leads to a recombination of existing capacities in order to reestablish the destroyed equilibrium. Development is always solidly rooted in that which already exists and is continuous with past experience. According to Piaget, "Intelligence is, by definition, adaptation to new situations, so there is a continual construction of structures." (Bringuier, 1980, p. 42)

Two concepts should be mentioned here because of the role they have played in music research, reversibility of thought and conservation. During the last two decades several music research studies have followed the Piagetian model in which conservation-type musical tasks were designed and administered to children in order to determine stages of conservation in the development of musical concepts. Conservation refers to the invariance of a particular dimension of an empirical object under controlled transformations in its other dimensions.

Howard Gardner. Using antecedents of Piaget's cognitive theory and Freud's psychoanalytic theory with its emphasis on affect, Howard Gardner has developed an elegant theory of artistic development. His prodigious writings in this area have opened to our understanding more specific ways of viewing musical development and planning for its nurturance. In an attempt to integrate affect and cognition, Gardner posits three systems, making, perceiving, and feeling. These systems are all present at birth and combine sensori-motor actions and perceptions with affective reactions. (Gardner, 1973) In music education these systems translate into psychomotor or skill development, perceptual or listening skills, and affective responses to music.

With Dennie Wolf, Gardner has proposed four major stages of artistic development which correspond to Piaget's stages of cognitive development. These stages are as follows: child as direct communicator, child as symbol user, youth as craftsman, and youth as critic and full participant in the artistic

process. Only the first two have a direct bearing on the scope of this Conference, child as direct communicator, from birth to age two, followed by the child as symbol user, which roughly covers the ages from two to seven. (Wolf and Gardner, 1980) In his most recent opus Gardner (1983) proposes a theory of multiple intellgiences which includes musical intelligence as an autonomous intelligence.

With this background which has sought to establish that early-childhood music education is firmly rooted in developmental theory, let us now turn to considerations of musical development and musical intelligence by music researchers.

Musical Development and Musical Intelligence

Based on some 25 years of research, Gordon has brought to our attention sequences of rhythm and tonal patterns that should be presented to young children. He also has determined that until about the age of nine, musical aptitude is developmental and dependent on environmental influences. The very young child reacts to immediate impressions with intuitive responses to what is aurally perceived. According to Gordon,....."music aptitude is stabilized potential for achievement in music, and.....does not stabilize until approximately age nine." (Gordon, 1979, p. 43)

Serafine (1983) has suggested that musical cognition entails two components: the structure of the musical object and the processes by which the human subject clarifies the object. She believes that listeners engage in a process of hierarchic structuring as they organize the musical sounds they hear around a central structural element in the music. A determination of the elements that are essential to children's understandings of music and the sequence by which they are processed would be beneficial in planning musical experiences and activities.

Zimmerman (1964, 1967) views musical intelligence as an organized structure of musical concepts based on perception. Musical learning begins with perception whether it be a discrimination between two phrases, singing a melodic chant or listening with understanding to a complex fugue. As long as the child is limited to the use of his spontaneous perceptions, the structural framework which he builds to represent his sound world is also limited. Initial perceptions can be likened to the single snapping of the shutter to give a brilliantly clear image of the immediate. With developing experiences, these perceptions become linked. From the immediate, perception moves to the mediate, i.e., from the initial percept to the emerging concept. Through experiences with music, the conceptual framework develops from simple concepts to an interlocking network of operative musical concepts that are based on relational transformations such as transposition, modulation, inversion, augmentation and diminution. Musical intelligence is based not only upon the perception of the particular effects of these transformations, but also upon an understanding of the relational processes from which they derive.

Musical memory is also inseparably related to musical intelligence. Memory can be viewed as that store of information encoded by assimilation and which in turn becomes the raw material for building and incorporating new knowledge. It is the anvil on which present and future musical learnings are fashioned. Everything a child does with music, whether listening, performing or improvising is within the context of remembered experience; i.e., what is learned is determined by what is already known (remembered). And, conversely, what a child will later remember is determined by his present experience and previous memories. What is remembered is also determined by the child's basic understanding of the task at hand and the context in which the task is presented. (Zimmerman, 1982)

From these various theories that can lend continuity and validity to our teaching procedures, we next consider the aural and musical abilities of infants, toddlers and preschool children.

Aural Awareness and Discrimination. As hearing is the last sense to leave the human being when he departs this world, so is it the first to acquaint the entering infant with the perceptual wonders that he is about to discover. Aural awareness begins with an active exploration of the perceptual environment by the infant. From an uncritical jumble of sense impressions, images and sounds begin to emerge. Even the very young infant tries to organize into patterns the welter of experience that comes to him from all of his senses. Recent research suggests that our minds come equipped with highly efficient neural arrangements that predispose us to make certain kinds of sense of our experiences and to use them in that distinctly human activity called thinking. Recent research also suggests that the requisite structures for pitch and tonal perception are available to infants much earlier than our present practices indicate. (Kessen, Levine and Wendrich, 1979) (Ostwald, 1973)

Babbling, a spontaneous, hereditary activity, begins when the neural centers directing it have reached a certain stage of maturation. Even deaf babies babble. In children with normal hearing, babbling changes and increasingly includes the incipient sounds of the spoken language. Babbling also contains a "sing-song" element that later becomes the basis for chant. In deaf children babbling dwindles away from lack of feedback.

Ostwald (1973) has provided us with a rather detailed map of musical behavior beginning with prenatal development of the fetus and its intra-uterine experiences with sounds, vibrations and rhythms. Here Ostwald suggests are the possible genetic determinants of heightened auditory sensitivity and musical ability.

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During the first month of life the infant differentiates the human voice from other environmental sounds and orients himself aurally to it, usually the mother's as the preferred sound. The second through the sixth months can be described as a period of "vocal contagion". It is also a time of learning to listen. The baby's vocalizing is stimulated by the convergence between his voice and that of another person. It is now that he enters into the "lalling" and "trilling" conversations with adults that have been documented in the literature.

By the second half of the first year the infant shows increasing ability to repeat self-generated vocalizations and to mimic those of others. This imitation includes rhythm and accent as well as pitch. Pitch glides encompass the intervals of a third to a fifth. A vocalizing sequence can be determined that moves from pitch glides to undulating pitches to discrete pitches by eighteen months.

Imitation is tied to developmental level. Twelve- to fifteen-month-olds can imitate short segments while the nineteen-month-old can already imitate complete sequences. (Fenson and Ramsey, 1981)

The infant is able to apprehend and differentiate simple musical gestalts, such as melodic contours and rhythmic groupings. Infants as young as five months can process this type of information. By monitoring changes in heart rate, Chang and Trehub (1977a, 1977b) showed that infants can discriminate between the transposition of a familiar melody and a new melody, and between two different rhythm patterns. In each study habituation to an initial stimulus as shown by the heart rate, followed by a second stimulus was used. Similar discriminative abilities have also been determined by Melson and McCall (1970) and Summers (1984). Another study has shown that infants can distinguish different frequencies and make relatively fine discriminations. (Olsho, Schoon, Sakai, Turpin, Sperduto, 1982)

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Kessen, Levine and Wendrich (1979) reported on the ability of infants in the first six months of life to imitate pitches. The pitches, D, F, A, were presented either vocally or on a pitch pipe during three spaced sessions. In the third session the twenty-three babies responded by vocalizing on the presented pitch significantly often. A sequence can be determined from this study that moves from vocalizing, to consciously varying pitches, to correctly imitating pitches. Also evident was the obvious enjoyment the infants derived from the activity and the effort expended to accomplish the task. This is an excellent early example of affect as a source of motivation.

The spontaneous singing of two-year-olds includes major seconds and unisons as well as minor thirds. Without exception the research indicates that children begin with small intervals and work their way out to the larger ones. It has also been determined that the vocal range for spontaneous singing covers c' to b'.

For the two- to four-year-old, music and movement seem to be synonymous. In learning a new song, children pick up on the rhythm before the pitch. (Davidson, et al, 1981) (Bentley, 1966) Preschool children are able to chant and imitate speech rhythms, keep a steady beat with rhythm sticks and clap a steady beat. (Rainbow and Owen, 1979)

In singing games and creative movement the child communicates with his body. He gives shape to musical sounds by projecting them in space, and at the same time acquires a spatial sense of himself in relation to other children and objects. The child also demonstrates his perception of melodic contour and rhythmic patterns through body movement.

Early cognitive activity moves from discriminating to categorizing and organizing perceptions. The preoperational child classifies perceptions according to one dimension at a time. Likewise, his reasoning moves from perception to perception. As the child interacts with sounds through movement and improvisation (experimentation), he should be guided in making decisions concerning their timbre,

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intensity, pitch and duration. It is here that labeling becomes important, since the label helps him to encode information and clarify his thinking about sound and/or music. Through a multi-sensory approach very young children can learn the following concepts of contrasting facets of musical elements, loud - soft, fast - slow, even - uneven, high - low, up - down, etc. The child should be able to perform this type of operation as he negotiates or engages in a musical task. After the child is able to do this easily, he can categorize sounds according to more than one dimension, e.g., soft - fast sounds, high - fast sounds, etc. The ability to handle an increasing number of concepts is a fundamental fact of development. A developmental sequence pervades research findings in music concept formation with concepts developing in the following order: volume, timbre, tempo, duration, pitch, and harmony.

Memory. The development of memory skills involves a composite of many factors and occurs over a wide age span. It involves active participation of the child in which selective attention, verbal skills and mnemonic strategies play key roles in the process. Older children as compared to younger use task appropriate strategies as an aid to memory. Let us consider some important components of the early memory process.

Preperceptual auditory or "echoic" storage contributes to auditory perception in infancy as in adulthood, but the useful lifetime of an echoic trace may be longer in infancy. (Cowan, Suomi, Morse, 1982) This would seem to indicate an absence of developmental trends in echoic memory and so suggests that initial perceptual memory is based on automatic processes that are a critical component of memory processing, especially in very young children. Research has also shown that very young children possess a precategorical acoustic storage system which aids in the initial understanding of oral language. (Clive Gilmore lecture, 1981)

Selective attention, the conscious allocation of one's attention to a specific stimulus, is essential in aural discrimination learnings and is the key to STM processing. Here a learning sequence can also be determined: perceive → discriminate → select → attend to → store → remember. Closely tied in with selective attention is the concept of dimensional salience. As it pertains to the learning of music, is there a preference for the selective attention given to one musical element over another, or to one quality of sound rather than another? For example, children tend to learn the rhythm of a song first which seems to suggest that rhythm patterns have salience over melodic patterns. (Bentley, 1966) (Davidson, et al, 1981)

Sergeant and Roche (1973) found that if a song is repeatedly presented to three-year-olds in the same key and within their singing range, the children will tend to reproduce the song in the same key in which it was initially learned. Here pitch seems to be salient. This ability diminishes with five- and six-year-olds as they begin to store melodic patterns in terms of contour and interval. A possible explanation is that the necessity for remembering more and more information leads to the storage of abstractions of perceptual data rather than reliance upon eidetic memory which is extremely inefficient. (Zimmerman, 1982) Perhaps most important for the music educator is the simple fact that musical memory develops in the context of musical activity.

With this background of the aural and musical awakening of very young children, let us move to a consideration of several studies which provide a wealth of information concerning musical development and suggest particularly fruitful directions of inquiry.

Representative Studies

Heinz Werner. An early study by Werner examined the spontaneous melodies of young children. He determined stages in 1) direction of melodic movement, 2) the overall form of the melody, and 3) the ending. Where the two- to three-year-olds sang descending melodies, the three- to four-year-olds used both ascending and descending lines. Two- to three-year-olds tended to repeat the entire motif, but three- to four-year-olds were more selective, repeating either the initial or the final phrase. The lowest tone of a descending phrase was the ending for the youngest children; those singing ascending and descending melodies began and ended on the same tone. The melodic range moved from a descending minor third which included only those two tones to a fifth, which included more than three tones. (1917)

The Pillsbury Foundation Studies, 1937-1948. Four studies covering the music research at the Pillsbury Foundation School in Santa Barbara have been reissued in one volume, Music of Young Children (1978). The primary purpose of the school, which included a limited number of children, ages two through six, "was to develop musical understanding in young children, and, by encouraging free musical expression, to discover the principles that govern children's relationship to music." Insights emerging from the studies that are basic tenets of early childhood music today are as follows: 1) for young children music is primarily the discovery of sound; 2) music time with children should include their purposive action or involvement; 3) in planning music time, it is necessary to consider social, environmental and procedural conditions; 4) spontaneous music making should be carefully observed.

Chant (Book I) notes that children's chant seems to recapitulate practices found in the singing of primitive people. This has been substantiated by the ethnomusicologist, Bruno Nettl (1956). A detailed analysis of the verbal form and the rhythmic, melodic and phrase structure of chant provides a base for the

further study of musical development by this means today. Book IV, Free Use of Instruments, includes case studies of three children. These can be used as examples for compiling one's own case studies.

In an attempt to carry on in the Pillsbury tradition, Shelley (1981) launched a study at the University of Maryland's Center for Young Children to gather information concerning children's natural musical expressions. More questions than those answered were encountered. Results did indicate, however, that 1) an environment conducive to children's free exploration of sound and unhampered sound construction can be established in a contemporary preschool setting when instruments are readily available. 2) Characteristics of children's musicality as observed in the Pillsbury Foundation School were evident, e.g., embryonic polyphony, interval size, free rhythmic structure, and chant as the primary expression of musicality.

Conservation Studies. In the 1960's a series of music conservation studies (Pflederer, 1964) (Pflederer-Zimmerman, Sechrest, 1968) focused our attention on children's underlying thought processes as they engaged in music tasks and activities. These studies were among the first to view musical development within the context of a cognitive developmental framework, in this case Piagetian. The research evolved from the following ideas: 1) an examination of the decentration process and conservation in musical development could indicate a more efficient way of presenting musical concepts to children; 2) the research could determine when in the developmental process a certain type of musical experience would produce the maximum amount of growth; and 3) the research could produce an instrument for determining sensitivity to tonal and rhythmic patterns. Findings from these studies indicated 1) that the ability to conserve the sameness of a phrase in spite of variation corresponded to Piagetian stages; and 2) an ordering of difficulty of the variations, with change of instrument and

change of tempo being the easiest.

Jeanne Bamberger. Bamberger (1982) followed a somewhat similar line of inquiry in an attempt to determine how the young child actually perceives music. Children, ranging in age from four to ten, were asked to draw a picture of the rhythm of a familiar nursery rhyme so that they could remember it or another child could clap it. The youngest children, ages four and five, tried to duplicate the motion of their clapping, thus producing swirling scribbles. Six- and seven-year-olds drew a figural representation of each discrete clap. The older children tended to group the claps metrically. Obviously, the role of learning, whether formal or incidental, cannot be casually dismissed. Of interest to us is the finding that the four- and five-year-olds tried to picture the activity of clapping; i.e., at this stage the medium is the message.

The research to which we have referred includes two ways of gathering information pertaining to musical development and response. These are observation and intervention. Observation can be of children's spontaneous musical activity or activity into which an outsider has intervened, either with a suggestion, a direction or a musical task to solve. In a true experimental setting the child is often asked to learn and remember in ways that he has probably never done before or will ever do again. For example, a discrimination task in terms of a "same-different" response causes difficulties for the preoperational child. For once the initial stimulus has been presented, any pattern that follows is different because it is no longer a part of the first one; it is, quite simply, different. A more useful task might be of the sorting variety which asks the child to find patterns that "go together".

Many music test items have been too verbally oriented. Listening tasks should be combined with the child's own music making. "Hands-on" music approaches

which use song bells, Orff instruments, electronic music instruments and computers are all possibilities for the kind of direct involvement that can furnish us with the clues to the child's thought processes as he interacts with music.

I urge you to be flexible and to combine observational and clinical methods with experimentation in relation to the problem studied. We need the narrative, verbal description of the case study to complement objective, numerical data and other scaled measures of behavior. With very young children an intensive analysis of well-defined aspects of their musical behaviors in dynamic natural contexts as opposed to artificially controlled surroundings is essential if we want to determine their cognitive understandings of music.

With so many infants and toddlers in daycare centers and preschools we are at the point where longitudinal studies can be conducted with little difficulty. Since longitudinal studies allow us to take a series of snapshots of the same child's development at various levels, they yield the most conclusive evidence concerning the development of various aspects of musicality.

This paper has attempted to bring together knowledge from developmental theory, from musical development and from specific research into early musical responses and activities. The evidence reflects that early childhood music education is a dynamic and robust profession grounded in theory and with a growing body of literature and research. Yet all too frequently daycare centers are a cottage industry even though they have to meet state licensing requirements. Unfortunately, these requirements rarely, if ever, mandate musical activity, much less call for a music professional. It is up to us to reach as many of these employees as possible through workshops, clinics and seminars to insure that theory will eventually be put into practice. The Parent-Toddler Music Program is an excellent example of this type of program.

There is cumulative research evidence that allows us to speak authoritatively and conclusively about 1) early vocal range and its expansion; 2) interval reproduction; 3) characteristics of spontaneous singing; 4) stages in learning a song; and 5) certain aspects of rhythmic development, such as the effect of tempo on the accuracy of a child's motor responses. We need to encourage research in cognitive and skill development, in memory development, in our evaluative procedures, and in the influences of the social setting on musical learning.

Innate musical responsiveness and musical development are nurtured best within a rich and stimulating musical environment that provides for both individual and group learning experiences. Development of aural skills, dance and movement, and vocal and instrumental improvisation are important facets of this environment. The active production and reproduction of sounds contribute greatly to aural discrimination in children.

I would like to suggest that there are two ways of approaching music with children of any age, 1) the psychoacoustic "building blocks" approach which considers elements and musical fragments, i.e., parts before wholes; and 2) the psychomusical ready-built "building" approach which considers music as an aesthetic unity, i.e., wholes before parts. This approach can be exemplified by asking the child the question, "What do you hear?" before he listens to a short but complete musical example. Each of these approaches is compatible with a developmental orientation; each can be sequentially organized; but neither should be exclusively followed.

Lessons should be designed so that the information is neither completely strange nor completely familiar, but just at the cutting edge of the child's experience and ability to comprehend. Children should be prepared gradually for unusual or new musical experiences. A developmental music task is two-pronged; it has initiating activities by either the child or teacher and

promoting activities. We should be certain that the promoting activities lead to expanding awarenesses and understandings and to further learning. A sequence of musical experiences presented in an inviting and non-threatening musical environment will nurture the musical development of our children and lend meaning and pleasure to our teaching.

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